**Listing of claims:**

Claim 1 (currently amended): A method of measuring line profile asymmetries in microelectronic devices, the method comprising the steps of:

directing light at an array of microelectronic features of a microelectronic device;

detecting light scattered back from the array comprising one or more features selected from the group consisting of one or more angles of reflection and one or more wavelengths; and

comparing one or more characteristics of the back-scattered light by performing an operation ~~selected from the group consisting of~~ comprising examining data from complementary angles of reflection ~~and performing a model comparison~~.

Claim 2 (original): The method of claim 1 wherein the directing step comprises directing light at substantially a single wavelength.

Claim 3 (original): The method of claim 1 wherein the directing step comprises directing light at a plurality of wavelengths.

Claim 4 (original): The method of claim 1 wherein the comparing step comprises comparing light intensity.

Claim 5 (original): The method of claim 1 wherein the comparing step additionally comprises comparing phase.

Claim 6 (original): The method of claim 1 wherein the comparing step additionally comprises comparing ratios of light magnitude and light phase.

Claim 7 (original): The method of claims 1, 2 or 3 wherein the directing step comprises directing light at an array of microelectronic features in general conical configuration.

Claim 8 (original): The method of claims 1, 2 or 3 wherein the directing and detecting steps are performed by an angular scatterometer.

Claim 9 (original): The method of claims 1, 2 or 3 wherein the directing and detecting steps are performed by a spectral scatterometer.

Claim 10 (original): The method of claims 1, 2 or 3 wherein the comparing step comprises decomposing back-scattered light into S and P components relative to a plane of incidence.

Claim 11 (original): The method of claims 1, 2 or 3 wherein the detecting step comprises detecting specular order diffracted light.

Claim 12 (original): The method of claims 1, 2 or 3 additionally comprising the step of employing the results of the comparing step to detect asymmetries selected from the group consisting of asymmetries within a single layer of the microelectronic device and asymmetries within multiple layers of the microelectronic device.

Claim 13 (currently amended): The method of ~~claims~~ claim 12 additionally comprising the step of controlling a manufacturing process if results of the comparing step indicate an asymmetry in the array.

Claim 14 (currently amended): An apparatus for measuring line profile asymmetries in microelectronic devices, said apparatus comprising:

means for directing light at an array of microelectronic features of a microelectronic device;

means for detecting light scattered back from the array comprising one or more features selected from the group consisting of one or more angles of reflection and one or more wavelengths; and

means for comparing one or more characteristics of the back-scattered light by performing an operation ~~selected from the group consisting of~~ comprising examining data from complementary angles of reflection ~~and performing a model comparison~~.

Claim 15 (original): The apparatus of claim 14 wherein said directing means comprises means for directing light at substantially a single wavelength.

Claim 16 (original): The apparatus of claim 14 wherein said directing means comprises means for directing light at a plurality of wavelengths.

Claim 17 (original): The apparatus of claim 14 wherein said comparing means additionally comprises means for comparing light intensity.

Claim 18 (original): The apparatus of claim 14 wherein said comparing means additionally comprises means for comparing phase.

Claim 19 (original): The apparatus of claim 14 wherein said comparing means additionally comprises means for comparing ratios of light magnitude and light phase.

Claim 20 (original): The apparatus of claims 14, 15 or 16 wherein said directing means comprises means for directing light at an array of microelectronic features in general conical configuration.

Claim 21 (original): The apparatus of claims 14, 15 or 16 wherein said directing and detecting means comprise an angular scatterometer.

Claim 22 (original): The apparatus of claims 14, 15 or 16 wherein said directing and detecting means comprise a spectral scatterometer.

Claim 23 (original): The apparatus of claims 14, 15 or 16 wherein said comparing means comprises means for decomposing back-scattered light into S and P components relative to a plane of incidence.

Claim 24 (original): The apparatus of claims 14, 15 or 16 wherein said detecting means comprises means for detecting specular order diffracted light.

Claim 25 (original): The apparatus of claims 14, 15 or 16 additionally comprising means for employing the results of the comparing step to detect asymmetries selected from the group consisting of asymmetries within a single layer of the microelectronic device and asymmetries within multiple layers of the microelectronic device.

Claim 26 (currently amended): The apparatus of ~~claims~~ claim 25 additionally comprising means for controlling a manufacturing process if said comparing means indicates an asymmetry in the array.

Claim 27 (new): A method of measuring line profile asymmetries in microelectronic devices, the method comprising the steps of:

directing light at an array of microelectronic features of a microelectronic device;

detecting light scattered back from the array comprising one or more features selected from the group consisting of one or more angles of reflection and one or more wavelengths; and

comparing one or more characteristics of the back-scattered light by performing an operation comprising performing a model comparison with an asymmetric model.

Claim 28 (new): The method of claim 27 wherein the directing step comprises directing light at substantially a single wavelength.

Claim 29 (new): The method of claim 27 wherein the directing step comprises directing light at a plurality of wavelengths.

Claim 30 (new): The method of claim 27 wherein the comparing step comprises comparing light intensity.

Claim 31 (new): The method of claim 27 wherein the comparing step additionally comprises comparing phase.

Claim 32 (new): The method of claim 27 wherein the comparing step additionally comprises comparing ratios of light magnitude and light phase.

Claim 33 (new): The method of claims 27, 28 or 29 wherein the directing step comprises directing light at an array of microelectronic features in general conical configuration.

Claim 34 (new): The method of claims 27, 28 or 29 wherein the directing and detecting steps are performed by an angular scatterometer.

Claim 35 (new): The method of claims 27, 28 or 29 wherein the directing and detecting steps are performed by a spectral scatterometer.

Claim 36 (new): The method of claims 27, 28 or 29 wherein the comparing step comprises decomposing back-scattered light into S and P components relative to a plane of incidence.

Claim 37 (new): The method of claims 27, 28 or 29 wherein the detecting step comprises detecting specular order diffracted light.

Claim 38 (new): The method of claims 27, 28 or 29 additionally comprising the step of employing the results of the comparing step to detect asymmetries selected from the group consisting of asymmetries within a single layer of the microelectronic device and asymmetries within multiple layers of the microelectronic device.

Claim 39 (new): The method of claim 38 additionally comprising the step of controlling a manufacturing process if results of the comparing step indicate an asymmetry in the array.

Claim 40 (new): An apparatus for measuring line profile asymmetries in microelectronic devices, said apparatus comprising:

means for directing light at an array of microelectronic features of a microelectronic device;

means for detecting light scattered back from the array comprising one or more features selected from the group consisting of one or more angles of reflection and one or more wavelengths; and

means for comparing one or more characteristics of the back-scattered light by performing an operation comprising performing a model comparison with an asymmetric model.

Claim 41 (new): The apparatus of claim 40 wherein said directing means comprises means for directing light at substantially a single wavelength.

Claim 42 (new): The apparatus of claim 40 wherein said directing means comprises means for directing light at a plurality of wavelengths.

Claim 43 (new): The apparatus of claim 40 wherein said comparing means additionally comprises means for comparing light intensity.

Claim 44 (new): The apparatus of claim 40 wherein said comparing means additionally comprises means for comparing phase.

Claim 45 (new): The apparatus of claim 40 wherein said comparing means additionally comprises means for comparing ratios of light magnitude and light phase.

Claim 46 (new): The apparatus of claims 40, 41 or 42 wherein said directing means comprises means for directing light at an array of microelectronic features in general conical configuration.

Claim 47 (new): The apparatus of claims 40, 41 or 42 wherein said directing and detecting means comprise an angular scatterometer.

Claim 48 (new): The apparatus of claims 40, 41 or 42 wherein said directing and detecting means comprise a spectral scatterometer.

Claim 49 (new): The apparatus of claims 40, 41 or 42 wherein said comparing means comprises means for decomposing back-scattered light into S and P components relative to a plane of incidence.

Claim 50 (new): The apparatus of claims 40, 41 or 42 wherein said detecting means comprises means for detecting specular order diffracted light.

Claim 51 (new): The apparatus of claims 40, 41 or 42 additionally comprising means for employing the results of the comparing step to detect asymmetries selected from the group consisting of asymmetries within a single layer of the microelectronic device and asymmetries within multiple layers of the microelectronic device.

Claim 52 (new): The apparatus of claim 51 additionally comprising means for controlling a manufacturing process if said comparing means indicates an asymmetry in the array.